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Plantation Performance Averages for White Spruce

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The concept of a standard for plantation performance has been discussed many times. Stein (1974) said "... in every situation, a decision is eventually required about the adequacy of the existing regeneration".

Performance averages for white spruce (*Picea glauca* (Moench) Voss) are presented herein in terms of survival percentage, average height, and aggregate height (Fig. 1). The information is empirically taken from the control or untreated plots of research plantations in locations scattered across Ontario, rejecting any plots with less than 50% survival at 5 years after planting. The plantations (58 with 3+0 stock, 23 with 2+2 stock) contained a minimum of 500 trees. The average planting density was about 2950 trees per hectare (1200 trees per acre). The actual average performance at 5, 10 and 15 years after planting is shown (with standard errors) and possible values at 20 years are projected by freehand curves. The average heights at 15 and 20 years are, as expected, below the dominant heights (top 10%) shown by Stiell and Berry (1973) at Petawawa.

It is hoped that these averages may be of practical service in comparing locally the performance of young spruce stands against a broad average. It would be possible, by setting an arbitrary minimum success level (say 75% of the values), to establish a criterion by which success or failure is recorded. Plans for replacement of the poorer plantations could then be initiated.

References

STEIN, W.I. 1974. When are stands considered established? p. 422-427. In Symposium stand establishment, Proc. IUFRO Div. 1 and 3, Wageningen.

STIELL, W.M. and A.B. BERRY. 1973. Development of unthinned white spruce plantations to age 50 at Petawawa Forest Experiment Station. Dep. Environ., Can. Forest. Serv., Publ., No. 1317. 18 p.

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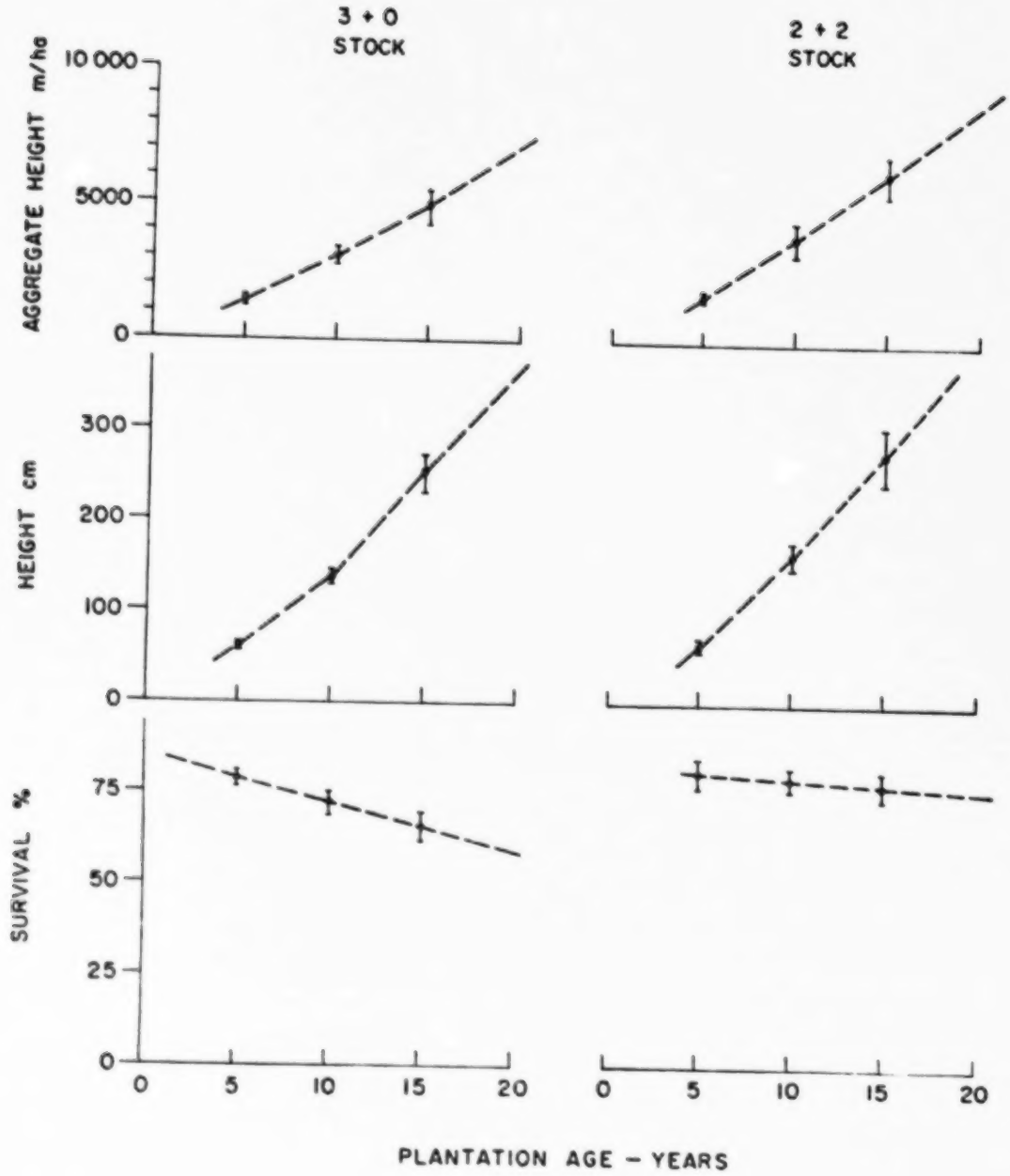

Figure 1 *Plantation performance averages for 3+0 and 2+2 white spruce: survival (%), average height (cm) and aggregate height (m/ha).*